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Literacy Education in Industrialized and Developing Countries: Changes of Perspective and Assessment Approaches¹

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Abstract

Literacy rates in developing countries have increased significantly during the last decades. This calls for a more complex, multi-faceted and multi-level view of the competencies related to literacy. The article reviews the most recent and visible changes of theoretical perspectives and highlights some of the methodological consequences referring to an adequate measurement of literacy abilities. It is argued that improving the quality of literacy research and the effectiveness of literacy education is of utmost importance for industrialized as well as developing countries. Democracy, cultural participation, employment opportunities, and increase of income are inconceivable without a universal distribution of high standards of literacy among the population.

1 Introduction

One of the most outstanding features in the field of education over the last two decades has been the significant reduction of illiteracy rates in the developing countries. From 1970 to 1995 the overall literacy rate in developing countries has increased their from 48% to 71% and in the least developed countries from 30% to 50% (UNPD 1998: 231). In some major regions of the world, i.e. Latin America and East Asia the literacy rates exceed at the end of the century the 90% mark.

As the literacy rates in developing countries are rising, new theoretical and practical challenges in the field of literacy education arise and there is need for a more complex theoretical approach and valid empirical data. Literacy education incorporates, beyond its general relatedness to social, economic and political changes, some very specific cultural elements which are unique to national or regional settings. Nevertheless, the experiences of literacy education in industrialized countries, which has a long and multi-faceted history (Graff 1981) can offer useful insights for the orientation, improvement and monitoring of teaching, learning and educational policy design in developing countries.

For many decades, since the introduction of free and obligatory elementary schooling for all children, it was believed that physical school attendance would guarantee basic 'literacy' for all but a small residual group of severely handicapped persons. As has often been observed, the underlying notion of literacy was a dichotomous one: It was assumed that people either knew how to read and write, or that they didn't. And it was further assumed that this knowledge, once acquired, would always be retained. That is to say, no

distinction was made between 'primary illiteracy' which is due to a lack of any successful initial reading instruction and 'secondary illiteracy', due to a lack of application of reading/writing skills after initially successful instruction.

Research on the acquisition and retention of literacy has challenged and fundamentally qualified these assumptions. A study commissioned by the European Community has shown that literacy can, indeed, be lost, but this appears to be a relatively rare occurrence found only in about every seventh of the 'illiterates' identified in the research. Most 'illiterate' adults had never developed sufficient levels of literacy during their time of schooling (Communautés Européennes 1986).

The term 'levels of literacy' just used did not occur by coincidence. It is increasingly applied in literacy research in the industrialized countries, because it fulfills several needs of considerable theoretical and practical import:

- (i) The concept of 'levels of literacy' does justice to the fact that "the ability to understand and use those written language forms that are required by society and/or valued by the individual" (Elley, Schleicher & Wagemaker 1994: 5) can exist in varying degrees of perfection ranging from simple decoding to complex inferential operations.
- (ii) It thus facilitates distinctions between different forms of 'functional literacy' (Gray 1956: 24). The latter term was originally conceived to express the constitutive relationship of literacy to a particular culture. Given that the demands on a person's ability to process coded information are highly dependent on social context, however, it can be argued that 'functional literacy' is not necessarily the same for all citizens in a culture or country (Roberts 1995: 420 ff.).
- (iii) At the same time, the notion of 'levels' takes recent theoretical developments into account. 'Literacy' should neither be a dichotomous variable, dividing a population into two groups, nor is it simply a continuous one. There is substantial evidence that it involves certain distinct mental operations which suggests the construction of a hierarchical taxonomy rather than a uniformly continuous measure (Mosenthal & Kirsch 1992).
- (iv) Finally, the term lends itself to further differentiations according to various domains of literacy skills among which the distinction of narrative, expository, and documentary texts is probably the most frequently found in the reading/writing community (Barr, Kamil, Mosenthal & Pearson 1991). 'Numeracy' and 'computer literacy' are obvious extensions of the original concept of literacy which have particular importance in countries whose economies are driven rapidly into the global market. The fact that these shifts occur differentially depending on the developmental state of regions and economic sectors creates the need of considering 'literacy profiles' rather than single-dimension 'levels' alone.

Most of these considerations probably also apply to countries which are characterized by strong intra-national differences of development in general and multiple demands on literacy in particular.

Much of what has been said so far was guided by theoretical rather than practical considerations. It may be helpful to note, however, that the difference between public awareness of an 'illiteracy problem' including its political implications, and the state of research on literacy education may be quite large. At least in some countries media attention and, indeed, the practice of literacy education are still very much dominated by the dichotomous notion of absolute 'illiteracy'. Perhaps as a consequence of this public interest in absolute numbers of 'illiterates' as well as simple figures for the success of literacy programs, the endeavors of some academic specialists in this field still center

around the aim of understanding qualitatively how and why 'illiteracy' occurs locally and individually, giving low priority to basic research and field surveys (Müller 1995). In other parts of the world, such as the United States and Canada, much has been invested into these more quantitative activities, and this trend is beginning to influence noticeably the entire group of industrialized and industrializing countries, especially at the supranational level.

The present paper is meant to situate politically these visible changes of perspective and to highlight some of the methodological consequences. It will be concluded by some remarks on the limitations of this approach.

2 Socio-Economic and Political Context

Most industrialized countries find themselves involved in a process whereby jobs are exported to regions with lower production cost levels. "Globalization" is, first and foremost, perceived as a flow of products, capital, and information in a universal setting which has sharply increased international competition (Tuijnman 1995). Rising unemployment figures in most industrialized countries are no longer seen as temporary drawbacks in a general trend towards increasing wealth for almost everyone, but as a consequence of fundamental changes in the international division of labor, facilitated by technological progress and thus forced from outside. It may be worth noting that these changes were masked, for some time, by other trends, above all the creation of new jobs for women and the growing importance of the tertiary sector of the economy. In Germany (former territory of the Federal Republic), for instance, the number of employed persons rose until 1992 in spite of a simultaneous increase of unemployment (The Federal Ministry 1995: 8 f.). Since then, however, the unemployment issue and, consequently, debates over policies favorable towards the creation of jobs, are at the very heart of public discourse.

This is the context in which literacy, implicitly interpreted as 'human capital' (Schultz 1960; Becker 1964; Roberts 1995: 417), begins to play a fundamental role: It is easy to argue that attaining the highest possible standards of literacy becomes almost equivalent to these countries' economic survival, because jobs with low skill requirements are particularly prone to abolition by automation or to being transferred to low-income/low-living expenditure settings. New and relatively safe jobs, so the argument continues, will rely on high levels of competence in terms of information processing, beginning – but not ending – with the reliable decoding and interpreting of 'functional' texts as well as numerical and graphical representations. If this perspective is accepted, it will be noted that a substitution of the former simple categories 'literate' versus 'illiterate' by a set of more sophisticated measures of the degrees, or 'levels', of literacy is crucial, because it is a prerequisite for the definition of internationally comparable standards.

At the same token, certain key concepts of (neo-)classical Human Capital Theory which had dominated debates over educational policy in the 1960s and 1970s are now necessarily substituted by more educational terms. It has been recognized for a long time that 'years of schooling', for instance, is a relatively poor indicator for the productivity generated by education and that direct measures of numeracy and/or literacy would be preferable, at least in industrialized settings (Bowman & Anderson 1963; Peaslee 1967; Roberts 1995: 414 f.). In the current situation, it is becoming more and more obvious that, indeed, the quality rather than the quantity of education has to be considered. Consequently, new approaches to the assessment of literacy are presently gaining attention and recognition.

As has already been noted, however, the old dichotomous notion of absolute literacy still persists in less economically-minded discussions. The widespread demand for estimates of the 'number of illiterates in country X' (as opposed to information on the *distribution* of skills) is satisfied periodically by newspapers and popular publications with front-page 'disclosures'. Interestingly, closer investigations show for the case of Germany that these 'news' all go back to a single highly unreliable estimate, first published by the German Federal Ministry of Education and Science in 1981 (Ehling Müller & Oswald 1981; Franzmann 1990; Botte 1990) and since then widely disseminated by the German Commission for UNESCO as well as the UNESCO Institute for Education, although these same two institutions have later repeatedly warned against the use of such crude figures. The original estimate named a margin of uncertainty of 0.5 to 3 million adult 'illiterates' for the former territory of the Federal Republic, and it is quite remarkable to see how the lower limit vanished from public notice, whereas the upper limit is retained and occasionally even increased.

It may be illuminating to follow a concrete and recent example. One of the most recent versions of this recurrent 'news item' (April, 1996) was disseminated by a news agency with reference to UNESCO. It named the well-known upper limit of 3 million 'illiterates' in the former territory of the Federal Republic of Germany and added the new figure of 340,000 for the former territory of the German Democratic Republic. The source of the latter figure could not be traced at either the German Commission for UNESCO, the UNESCO Institute of Education, or UNESCO headquarters in Paris. Interestingly, the former GDR had never allowed any respective figure to be released (Huck 1992). The message was quickly taken up by newspapers issued on April 18, 1996 (e.g., *Berliner Morgenpost* 1996: 1) where no distinction between 'primary' and 'secondary illiterates' was mentioned. Just a few days later, April 23, 1996, on *Saar-ländischer Rundfunk*, the story was followed by a publicly broadcast statement of the chairman of the German Reading Foundation, Professor Hilmar Hoffmann, quoting similar figures, but this time increased to 4 millions, explicitly said to include all 'secondary illiterates'. The statement was part of an effort to support 'Book Day', commemorated on that date for the first time ever.

So, the issues governing this second segment of public discourse are quite distinct from the economic concerns mentioned above. Here, 'threatening' figures are used to promote social and cultural values, e.g. the merits of reading against the intrusions of the new media. Vested institutional interests cannot be ignored entirely, however. For example, the chairman of the German Association of Publishers and Bookstores was quick to take up the cue, still on the 23rd of April. Similarly, the Association of *Volks-hochschulen*, a powerful organization in adult education, has occasionally used such figures in order to bolster its own literacy education programs (Fuchs-Brüninghoff 1988). Nevertheless, it should be recognized that these campaigns, even if they are based on somewhat dubious 'data', preserve the insight that functional 'literacy' can and must not be reduced entirely to a productivity factor in a global trade competition.

Even so, it is quite evident that the use of ill-founded estimates dividing the population into 'literate' and 'illiterate' bears all connotations of ideological practice. It operates from a construct which is arbitrary and it is demonstrably linked to political interests, however benevolent these may appear to be.

The linkage of definitions of literacy and of corresponding estimates to politics, i.e., to power and influence, has been rightly observed by others (Roberts 1995: 412; Wickert 1992). High estimates become an instrument to channel funds into the respective literacy programs and, more generally, into the coffers of powerful institutions with active

interests in the field. Low estimates are easily suspected as serving claims to legitimacy by those responsible for current educational policies.

The question is, then, how to deal with this situation and, in particular, whether or not new research on literacy has a contribution to make in this respect.

The 'solution' offered by some authors, namely, not only to acknowledge the existence of competing definitions, but even to welcome it under the seemingly liberal label of a 'pluralist approach' (Roberts 1995: 420 ff.) is too simple to be of great help. Theoretically, it is untenable because it fails to recognize that individual 'literacies' do not manifest themselves in radically unique forms: They can be demonstrated empirically to follow regular patterns, and while there are, indeed, systematic differences, these can also be shown to be subject to systematic change, e.g., to learning. Practically, this line of argument discourages all efforts to improve situations from which the individuals concerned indisputably suffer. This 'postmodern' view is thus readily recognized as being itself an ideological construction in the sense of this term: It is proposed by highly privileged members of the affluent societies who in effect, if not by intent, blame the individual for being 'literate' in a way which, unfortunately, does not add very much to his or her quality of life and who mask this verdict behind an academic rhetoric which is primarily self-referenced.

One final point should be made in discussing the social and political context of literacy research and literacy education in industrialized countries, which is of utmost importance also for developing countries. There is an unchallenged consensus that democracy, based on active and well-informed participation of citizens, is inconceivable without a wide distribution of high levels of 'literacy' – of a kind which allows for efficient information management, rational argument, and nonviolent conflict resolution. This relationship should, indeed, become stronger as matters of public debate and policy are getting more complex in modern societies. It is a lasting contribution of Paulo Freire to (literacy) education worldwide to have insisted on this observation, as well as its complement, the constitutive role of consciousness and participation for the development of literacy (Freire 1979). It appears difficult to imagine that citizens who cannot estimate the effects of, say, changes in social security rates on their own income, let alone product prices and hence unemployment figures, will be in a good position to judge rationally, i.e., to criticize, government policies. So, it is argued here that also from this perspective adequate measures of literacy are, in the long run, to be preferred over dichotomous definitions resulting in arbitrary estimates of numbers of absolute (primary or secondary) 'illiterates' (Peek 1995; Bélanger 1992; Botte 1990: 75 f.).

The following lays out some recent developments in the direction of improving the quality of literacy research and eventually, if only indirectly, the effectiveness of literacy education.

3 Advances in the Technology of Literacy Research

In the two preceding sections, reasons were given to base practice and policies on the best measures of literacy available. Advances in research technology have, indeed, opened up new and promising approaches as well as sharpened the awareness for the methodological problems involved.

A crucial lesson learnt from early attempts to estimate numbers of 'illiterates' (e.g., by testing army recruits or prison inmates) refers to the necessity of working with good representative samples rather than special groups which introduce some unknown bias or which are simply assumed to incorporate a large number of 'illiterates' as the target

group. Unfortunately, no research in this area can produce results with any claim to be taken serious, if it is not based on clear definitions of a target population and if it does not adhere to rigorous sampling procedures. It is clear from what was stated above as to the social and political context that the focus of literacy research cannot really be restricted to the identification of persons with extremely low levels of reading or writing ability. Therefore, the aims of such projects must include the population as a whole, e.g., all persons aged 15 to 64 which is essentially the politically and economically active stratum of the society. This has obvious implications not only for the principles of sampling, but also for the methodology chosen.

Firstly, except under special circumstances, a full-fledged special household survey is required. In the recent *International Adult Literacy Survey* (IALS: OECD & Statistics Canada 1995) most participating countries implemented such special survey, usually through contracted firms which are specialized in such exercises and therefore can apply their teams of trained interviewers and supervisors under sophisticated sampling networks. As was to be expected, the critical point was not the technology, but the acceptance of a voluntary 'reading test' by mature adults most of whom are convinced that their reading skills are 'good' or 'excellent' (in Germany 77.6 percent even at the lowest level of the 'prose scale' at which 14.4 percent of the sample performed). Canada was the exception insofar as here, and only here, IALS could be tied to a survey already existing (the Labour Market Survey with an excellent record of public support). Under less perfect conditions, however, such assessment may be suspected of being particularly weak at the extremely low and the extremely high levels of literacy, because these groups of respondents could have reasons to decline cooperation more frequently than others. It was attempted, therefore, to control for such effects (e.g., by using educational attainment as a 'marker variable'), and there was little indication that the overall results were distorted. But a non-calculable margin of uncertainty remains, and it will have to be taken into account, when the findings are interpreted.

Secondly, any state-of-the-art research on literacy must reckon with the diversity of requirements in modern societies. It has already been mentioned that the individuals are confronted with a variety of texts which do not necessarily place the same demands on reading comprehension. The *International Study of Reading Literacy* conducted in 1990/91 among 9- and 13-year-old students by the IEA (*International Association for the Evaluation of Educational Achievement*; Elley et al. 1994) used the distinction between narrative texts, expository texts, and 'documents' (e.g., tables and graphs). The special assessment of literacy skills of 21- to 25-year-old U.S.-Americans within the framework of the *National Assessment of Educational Progress* in 1985 (NAEP; Kirsch & Jungeblut 1986), the *Study of Literacy Skills among Job Seekers* in the U.S. in 1989/90 (Kirsch, Jungeblut & Campbell 1992), and the *National Adult Literacy Survey* (NALS; Kirsch, Jungeblut, Jenkins & Kolstad 1993) all distinguished between prose, document, and quantitative literacies which can be called the 'domains' of literacy. The same holds true for IALS (data collection in 1994) which will be the primary reference here. Among the major studies recently conducted in industrialized countries, only the Canadian survey of *Literacy Skills Used in Daily Activities* of 1989 (LSUDA; Montigny, Kelly & Jones 1991) also included the measurement of writing skills.

It is revealing that these large studies, each incorporating several thousands (or even tens or hundreds of thousands) of respondents, usually do not incorporate writing skills and that the domains of literacy with the exception of the IEA Study do not include narrative, i.e., literary, prose. While the exclusion of writing skills may at least in part be explained as being driven by considerations of costs and measurement difficulties

(Lehmann 1992), it seems rather obvious that the funding agents, usually governmental agencies, are not as much interested in the literary aspect of literacy as they are in those skills which can be related more directly to economic activities. The IEA Study has shown, however, that from the measurement point of view 'narrative literacy' is not more difficult to assess than other domains of reading comprehension.

It is only fair to mention that the above named studies were not entirely restricted to reading as it may be required on the workplace. In the IALS, for instance, great care was taken not only to have a balance of text and item input from all participating countries, but also to have reading tasks equally pertaining to work, home, and community activities. The latter was also intended in the other studies. The underlying assumption is, of course, not that these contexts are alike for all individuals in the target population, or even across countries, for that matter, but that the skills required to operate efficiently within a domain of literacy are essentially comparable across contexts. Fortunately, this is an assumption which can be tested, at least partially, in careful test analyses.

The fact that these studies were based on a concept of literacy which was differentiated according to domain ([narrative], [expository] prose, documents, quantitative) and, simultaneously, according to context (work/school, home, [community]) and which called for high-quality measures within that framework placed a heavy burden on the quality of the tests used. Therefore, it was necessary to work on the basis of more recent psychometric approaches. In particular, advances in the so-called Item Response Theory, which incorporates a family of mathematical, namely probabilistic models for test analysis, not a substantive theory of mental processes, have made it possible to work with reading tasks of varying degrees of difficulty. This method was originally elaborated by the Danish psychometrician Rasch (1960) and has been extended in numerous ways since (Andrich 1988). One of the essential properties of this approach is that it renders simultaneous item difficulty and person ability estimates scaled to the same metric which, if the model holds, are independent of distributional parameters of the sample tested. If the model does not fit the data, this is indicated by a number of statistical indicators.

It is of primary importance to note that it was, indeed, possible, to develop tests which proved to be Rasch-scalable within very heterogeneous populations and even across such populations. While this is not to deny that the efficiency and effectiveness of literacy education may depend very much on context, it does say that the differences between easy and difficult items are basically identical for all respondents, even in these heterogeneous samples. It follows that substantive theories explaining the acquisition of literacy are not as inseparable from psychometric models applied to the measurement of literacy as is sometimes assumed.

4 The Usefulness of Surveys for Literacy Research and Literacy Education

Taking again the most recent study, IALS, as an example, preliminary analyses of the data show that surveys of this kind produce evidence which can be truly useful in focusing educational policies on the improvement of literacy standards not only in the population as a whole, but also in 'critical' sub-populations identifiable through available background questionnaire data.

For some, across-country comparisons may smack too much of international trade competition to be considered as a respectable exercise. However, in the absence of good measures of the within-country development of literacy distributions over time it is difficult without such comparisons to judge the reality against what might be attained under favorable conditions. This is particularly valid under the assumption that high

standards of literacy are desirable not only from the economic point of view, but also in the interest of a well-educated, politically active society. Countries which have an efficient system of education and a strong presence of literacy in everyday life can serve as a model for those in which the reality is distinctly different from the objectives proclaimed; thus, they can function as an effective stimulus to implement change.

The fact that, among the seven countries participating in IALS, Sweden, for instance, displayed extremely commendable results in all three domains of literacy is noteworthy in several respects. Firstly, this confirms findings from the IEA Study in which Swedish students also were among the best performing among the 30 participating countries (Elley et al. 1994: 41 ff., 54 ff.). Since the two samples as well as the tests employed were independent of each other, this replication definitely enhances the credibility of both studies.

Secondly, the different domain definitions should be considered here: The IEA Study did include a special scale on literary/narrative texts, and it was correlated with the expository scale in the order of 0.75. There is, of course, no way of generalizing this relationship to the adult population which was at the focus of IALS, but it provides at least initial evidence that these two domains of literacy are by no means disjoint. Both appear to go together naturally, which is also reflected in most school curricula as well as some approaches to adult literacy education.

Some further evidence is provided by the fact that the search for factors which may have contributed to the remarkable Swedish results produced some distinct school-related influences (Lundberg 1993). So, some empirical basis is rendered for the plausible, yet otherwise speculative assumption that a well-developed school system which conveys high levels of literacy to its participants is associated with highly desirable long term effects. Indeed, a careful reanalysis of the *IEA Six Subjects Survey* of 1970 which had included a test of reading comprehension (Thorndike 1973) demonstrated that Swedish students had already performed at this high level a generation earlier (Taube 1993).

At the same time, the search for specific influences showed Sweden to have a strong literary culture observable, for instance, through indicators based on the production and consumption of print media. This is to say that one cannot simply separate the domains and reduce literacy to a particular set of skills relevant *merely* as a productivity factor. High levels of literacy are, so it seems, bound to foster reading practices which are not just 'functional' in the sense of stabilizing a particular social and economic system; conversely, extensive reading across domains demonstrably goes along with better text comprehension in each single domain.

In the present context, other findings are even more important, because they pertain to all the countries which have participated in IALS and thus serve as multiple replications. The data show very clearly that the distribution of literacy skills follows, as was to be expected, the well-known patterns of social stratification. This is most easily seen with respect to the levels of educational attainment, measured in IALS in terms of the *International Standard Classification of Education (ISCED)*, developed by UNESCO. Persons who have had access to more education are generally performing on higher levels of literacy, even though notable exceptions occur. There are some who have done quite well on the test even though they have not completed the last grade of obligatory schooling, and there are others who have obtained academic degrees and were unable or unwilling – or both – to complete the test with the required diligence and accuracy.

The situation is similar with respect to work position/occupation, measured through the *International Standard Classification of Occupations (ISCO)*, issued by the International Labor Office. Again, the general trend shows a close association of literacy

levels and vocational/professional success, and once more the inevitable exceptions occur. Once again, one has to be careful not to interpret such findings in a simplistic causal way. They do not show that literacy is *only* an instrument to get ahead in the competition for better jobs. Labor markets are governed by very complex processes: All one can say here is that literacy is either directly or indirectly related to advantages in a vocational career.

Given the close relationships between formal education and occupational status on the one hand and income on the other which are characteristic for industrialized countries, it was also to be expected that the literacy levels would be correlated with income, and this is, indeed, the case for the IALS data. Low levels of literacy are generally associated with a low average income and vice versa, irrespective of the occasional exception from that rule. That is not to say that someone with literacy difficulties is rightly denied access to sources of a satisfactory income, but it does describe the difficulties such a person has on the labor market. In fact, the available data which have not been fully explored yet allow to separate income from active work as opposed to other sources of income, and although the relationships between these may depend once more on complex institutional antecedents, the basic correlation between literacy level and income from current economic activities appears to hold for all participating countries. Perhaps it is best described by the finding that the lowest level of literacy is most frequent, in the majority of countries, either among those without any income of their own or among those whose income is within the lowest income quintile. Sweden with its well-developed welfare system is a notable exception here. In Canada, Germany, and the Netherlands the mitigating effects of welfare systems are also observable (OECD & Statistics Canada 1995: 61).

A point of considerable theoretical and practical significance is touched by the question of the relative weights of literacy skills as opposed to certificates from the system of formal education in this respect. So far, an answer to this question is only available for the special German case. Here, it is quite clear that the certificates carry a stronger influence on the labor market than the actual literacy skills as measured in the study. It is tempting to interpret this as contradicting theoretical expectations based on the Human Capital approach while confirming the tenets of the so-called 'Signaling Theory' or 'Screening Hypothesis' of the labor market (Riley 1979) according to which employers cannot assess a person's productivity and therefore need certificates in order to 'estimate' it. And, perhaps, this tendency is even aggravated by alleged traits of the German culture. But such conclusion would at least be premature. Literacy as measured in these large-scale assessments refers to only one of the abilities which make a job applicant attractive for an employer. There are other 'key qualifications', for example social virtues, perseverance on tasks, or the ability to communicate easily, which may be better reflected in the documents presumed to attest to an entire educational career. Clearly, more research, encompassing the entire IALS data set and preferably additional data as well, is needed on this issue.

Literacy and employment status is another crucial issue, closely related to the one just discussed. Low levels of literacy are greatly over-represented among the unemployed in all participating countries, and persons who have performed well on the test have indicated very rarely that they were unemployed. Of course, it is as difficult here as it was above to establish a clear-cut causal relationship between literacy and the acquisition of a job. Since it is known, however, that jobs with low literacy requirements are the ones most threatened by efforts to reduce production costs through automation or job exportation, it seems *also* legitimate to consider this aspect of literacy as a relevant com-

ponent of labor market-skills, all the more so, since the unemployment issue plays *the* major role in contemporary public debates, as has already been mentioned. The idea, then, is to assess this qualification with special focus on the unemployed as one of the least privileged groups, and it is hoped that higher literacy levels in all social strata, but especially among the economically threatened groups, will help to minimize unemployment risks. It does *not* follow from this that the entire study was or is driven by the notion of job competition in a capitalist society, or on the global market, respectively.

However, this perspective is strengthened by the fact that the preliminary international data analysis for IALS has established a fairly clear relationship between employment *growth* and literacy. Job losses have been greatest in those sectors where literacy patterns were least favorable, and expanding economic sectors were associated with exceptionally high levels of literacy (OECD & Statistics Canada 1995: 65 ff.). Even under the pessimistic assumption that literacy cannot create jobs but that it, at best, fulfills demands imposed on a society by a changing economic framework it would follow that all efforts must be made to strengthen this key qualification as broadly as possible in societies which begin to feel the effects of international 'terms of trade' which favored them for so long.

The nature of the IALS data set makes it comparatively easy to demonstrate the usefulness of such surveys in economic terms. They provide justifications for those who have long insisted on the necessity to 'invest' in education. More specifically, such investments seem to promise the highest 'social rates of returns' when made with respect to educational activities most likely to reduce the social costs of high unemployment. This would appear to favor expenditures at the primary and lower secondary level, where rates of return have convincingly been shown to be highest (Psacharopoulos 1985), but it does not preclude effort to maintain high standards at the higher levels of the educational system. So, such findings certainly imply the existence of a base line below which cuts in public educational expenditure would clearly become counterproductive.

It is much more difficult to render good examples for their usefulness in social and political terms, even though these aspects are certainly no less important. One reason for this is that it is even more difficult here to separate cause and effect. For instance, IALS has established a very strong relationship between levels of literacy and patterns of cultural participation where it is necessarily bound to (printed) writing: the reading of newspapers and books as well as the use of libraries are in all participating countries and in all domains of literacy uniformly related to the levels as measured in this study (OECD & Statistics Canada 1995: 184 ff.). The same holds true for active writing, as one might suspect. The better people are able to work with coded information, the more frequently they apply such skills and vice versa. It does not even seem necessary to discuss at length the question which of the two causes the other. Especially the European background study already mentioned (Communautés Européennes 1986) suggests that there is a 'take-off stage' below which the individual citizen will hardly be in a position to participate actively in public life, let alone manage the information according to standards required to pursue effectively his or her own interests.

It is probably this point which has given the 'illiteracy debate' in the industrialized countries such a strong defensive bias: Literacy is rightly perceived as a precondition for a thriving, pluralist culture and, above all, for democracy as the established way or at least the proclaimed goal of political decision-making and conflict resolution. 'Illiteracy', then, is obviously at odds with such ideas, and therefore it needs to be brought to public attention (at all costs?) so that remedy may be found.

A popular view of 'illiteracy' as a 'menace' to society is that it is a consequence of

alternative modes of handling information which is pertinent to the public discourse. Above all, the almost unlimited access to television programs many of which attribute much more weight to entertainment than to socially, economically, and politically relevant information is blamed for an alleged decline in reading skills. Although such decline was not confirmed for the Swedish students, as already mentioned, the allegation persists, and it is not entirely without an empirical basis. Both in the IEA Study of school children and in IALS a negative correlation between literacy and television consumption was found, in the case of the former also extending to computer games (OECD & Statistics Canada 1995: 187 ff.; Elley et al. 1994: 100 ff.). However, these correlations are open to several interpretations. Even if it's true that excessive television consumption is particularly frequent among school children with reading difficulties and even if, simply for reasons of time budgets, long hours in front of the television set are hardly compatible with frequent reading and writing, it is also difficult to deny that much of the public discourse, including intellectually demanding cultural debates, are initiated or at least disseminated through the so-called new media. If this is granted, it would seem required to take the possibility into account that the relationship between literacy and the use of new media is not uniform in the population, but that interaction effects occur: television news, public debates and widely broadcast cultural events may, for some people, be *supplements* to their extensive reading, while for others television entertainment may function as a *substitute*. In any event, these possibilities need to be investigated, and until this is done, it amounts to a gross oversimplification of the issues at stake to 'explain' literacy deficiencies by overall changes in the 'information industry'. So, this whole debate demonstrates, if anything, the necessity to discuss the issues on the basis of valid data rather than crude estimates or, even worse, allegations alone. Unfortunately, the existing literacy surveys include only scarce data on the use of new media which precludes any definite conclusion as of now. They have shown, however, that valid data on literacy levels are attainable; it remains to be seen which conclusions are to be drawn, once the *quality* of the use of new media is also measured and considered.

There are other findings from the IALS project which are potentially equally important, even if the consequences are not quite clear yet. One of these concerns the relative disadvantages of migrant groups which have gained a significant role in most industrialized countries. It was to be expected, of course, that these persons would do less well in a majority-language literacy test than those born in the respective country, and this is, indeed, confirmed by the data (OECD & Statistics Canada 1995: 155 ff.). So far, however, no generalizable measures were available for this phenomenon. Therefore, it was most instructive to see that some countries have been demonstrably more successful than others in keeping this margin at a minimum, most notably Canada with its 'dual immigration policy' of liberal regulations for disadvantaged groups in addition to an active encouragement for highly qualified groups. Evidently, in-depth analyses are now required to find out whether or not the observed differences can also be traced to specific integration programs, a question which is of utmost concern in those countries where growing economic difficulties have been accompanied by uncontrolled outbursts of open hostility against 'visible' immigrants. While language programs are certainly not the only activities to be considered here, any active immigration policy will have to make sure that lacking standards of majority-language literacy among these groups will not perpetuate social inequalities. The topic has been long recognized as a crucial issue in school policy. IALS may provide a good starting point for bringing it to public awareness in the field of adult education also, and specialized analyses, e.g. on differential item functioning between the groups, will provide additional insights.

A final example may illustrate the usefulness of large-scale surveys in literacy research. The IALS data sets include information on the age of the respondents, because relationships between age and literacy are potentially of prime significance not only for the identification of special target groups, but also for the practice of literacy education itself. Given that the test required, besides the technical skills of reading, writing and computing a certain amount of general background knowledge as well as some inferential intelligence, it was expected that maximum performance would be found among respondents who have reached the third decade of their lives. This expectation was generally confirmed (OECD & Statistics Canada 1995: 79 ff.). At the same time, it could be observed that the incidence of high levels of literacy becomes markedly less frequent from the sixth decade onwards, although, of course, some high performing individuals exist in these older age groups as well.

It is tempting to derive a strategy from this finding according to which efforts in adult literacy education should be concentrated on the younger age groups, but this would be a rash conclusion. Firstly, such reasoning would fail to recognize that the distribution of educational attainment is, within the setting of the industrialized countries, highly correlated with age. The general expansion of the educational systems and the increase of enrolment rates is a factor which has influenced heavily the distribution of literacy levels within the age groups. So, this important determinant of literacy has to be taken into account analytically, and it is by no means certain that the respective relationships are simply linear (note the probable interaction effect between initially attained literacy level and reading practices). Secondly, the data, at least in their present form, say nothing about possible relationships between age and motivation to maintain or improve one's level of literacy. While it is not totally unlikely that relative learning difficulties increase with age, some compensating factors may well be present. That is to say: this finding, too, needs further investigation, before any definite conclusions can be drawn for the practice of adult education. The required ingredients in terms of data are there; it is now time to put them to practical use.

5 Summary and Conclusion

By definition, the purpose of survey data is neither to provide individual diagnostics nor to be applied directly to program evaluation. With respect to the former, errors of measurement are usually too large, especially in a rotated design such as the one implemented in IALS; with respect to the latter, important information on the particular objectives and institutional as well as operational characteristics are missing. It would be a misunderstanding of such large-scale assessments to expect benefits which were never promised.

Surveys do have the potential of delineating realistic frameworks. This holds true for the aggregate estimates produced, inasmuch as knowledge of the distribution of literacy skills in the target population is constitutive for the definition of priorities in educational policy-making. But it is also true for the conception of the term literacy itself, which, in turn, implies at least some general guidelines for the practice of literacy education. In particular, the notion of 'levels of literacy' is based on the empirically confirmed insight that the abilities in question form a hierarchy of increasingly complex mental operations many of which can be fostered by suitable educational activities. It remains for the persons involved in respective programs to develop and try out adequate approaches, then revise them and subject them to further practical experience.

The theories upon which such assessments are based are theories of the cognitive

structure of the abilities which are under study. They must not be confounded with theories of the acquisition of such abilities, i.e., with theories of learning, nor are they identical with theories of human interaction. It is, of course, possible and, indeed, necessary, to take all of these sources of knowledge into account when programs of literacy education are developed, but one would be ill-advised to disregard, in the course of literacy education, available information on where one starts and where one is heading.

The current economic crisis of the industrialized countries and the changing educational demands in industrializing countries, which pretend to play a more advanced role in the new world division of labor, has sharpened the awareness of a 'literacy problem' in different socio-economic contexts. It may help to mobilize resources for efforts to minimize, if not to solve it – this seems to be, at least, the hope and immediate justification for those engaged in the research and for those funding it. But this is not to deny that even more deep-rooted motives are underlying such activities, namely those oriented towards a better informed and consistently reasoning citizenry, ready and capable of accepting the social and political challenges of the future.

Notes

1. This article is based on a paper presented at the „Seminário Internacional Educação e Escolarização de Jovens e Adultos“ in São Paulo, Brazil, May 6th, 1996.

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